

# **RS-232C (NTSC) Manual**

MODEL : LCD TV

Ver 3.0

2005. 04. 20

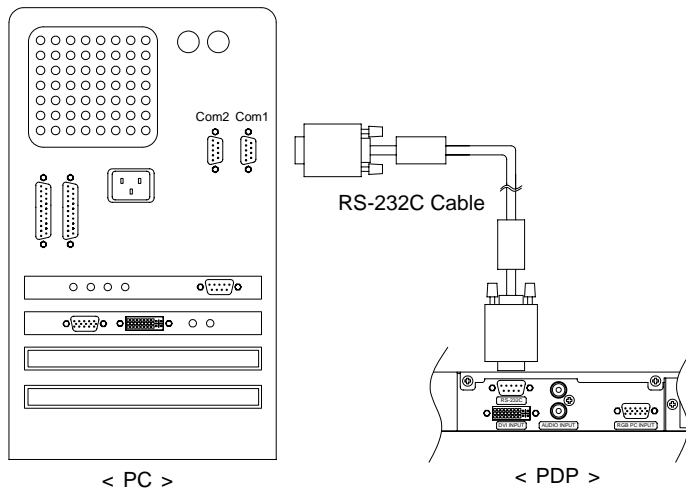
**R&D Center  
Harsper Co., Ltd.**

# < Control LCD & PDP through Serial Port >

Harsper R&D  
2005. 4. 20.

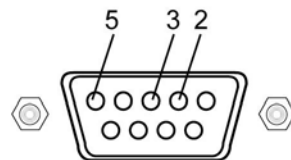
## 1. How to connect external equipment

- Connect the serial port of external equipment to the RS-232C jack of the monitor back panel.
- RS-232C cables not included with the Monitor.
- The remote control and LCD&PDP front panel buttons (except main power) doesn't operate when controlling LCD&PDP set by PC.



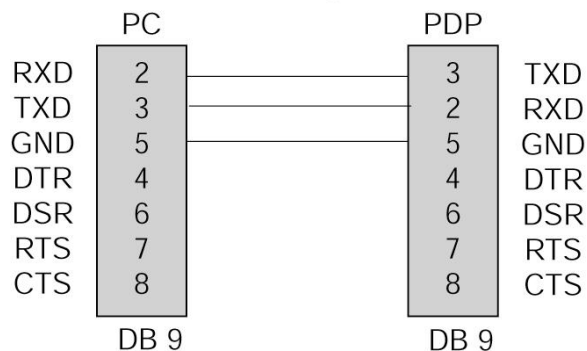
- Type of connector : D-Sub 9-Pin **female to female**

No.	Pin Name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	No connection
5	GND
6	No connection
7	No connection
8	No connection
9	No connection



- Cable Side (female) -

3-wire configuration



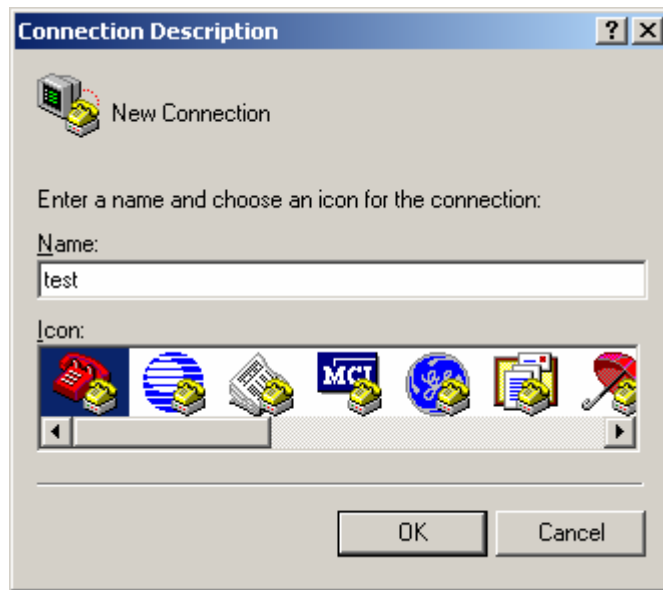
### [NOTE]

\* Use a crossed (reverse) cable.

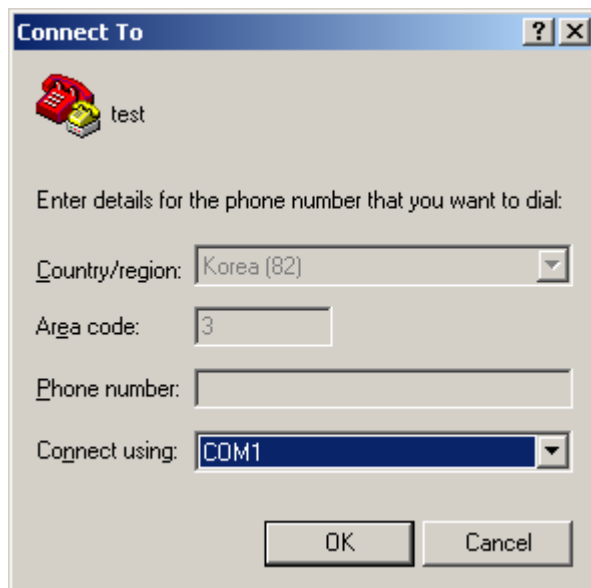
## 2. Run 'Hyper Terminal' (Example)



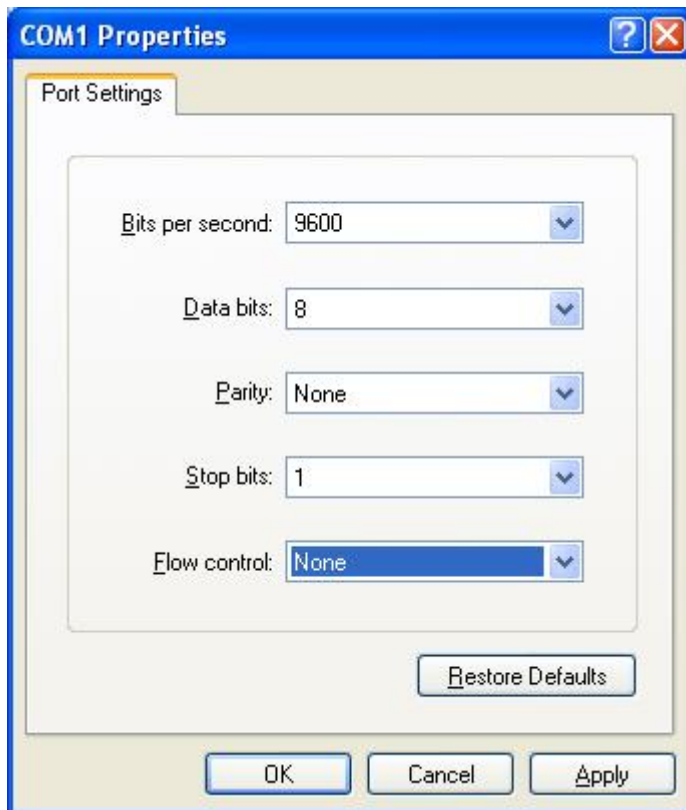
### 3. Enter any name



### 4. Select COM Port

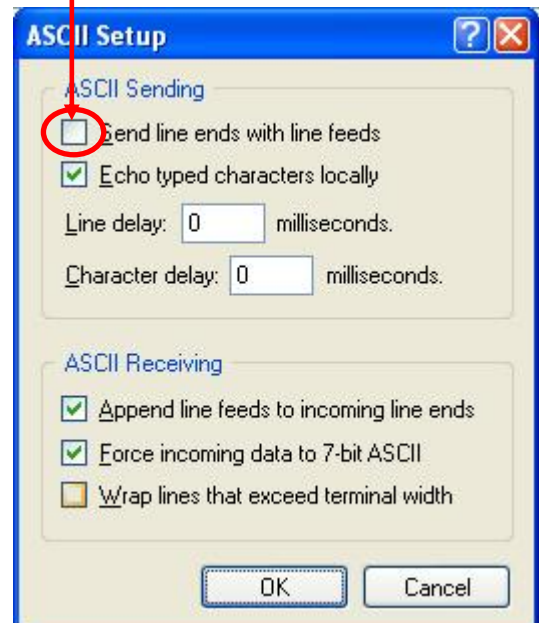
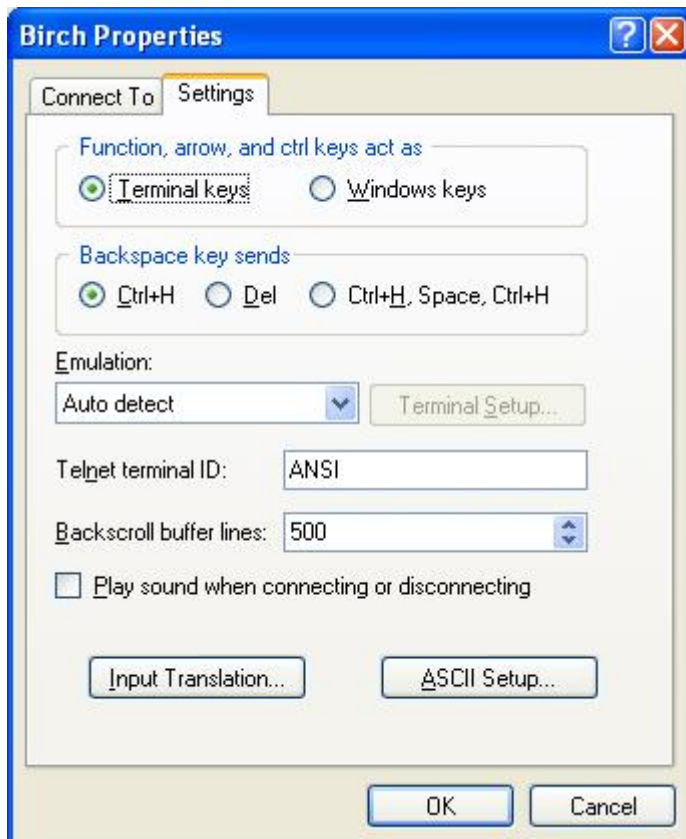


## 5. Set the port properties



**Caution :** You don't check the box  
If you check the box,  
TV doesn't work correctly.

## 6. Set the ASCII Setup



## < Control TV through Serial Port>

### Communication Conditions

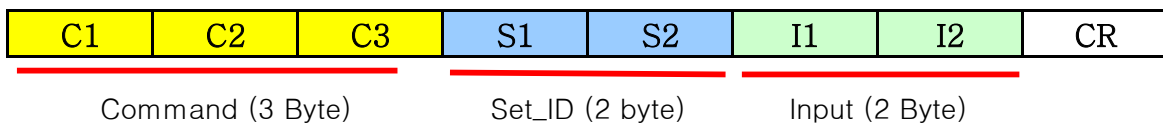
Baud Rate	9600bps
Data Length	8 Byte
Parity Byte	None
Stop Byte	1 Byte
Flow	None

### 2. Communication Procedure

- The response to cope with him must be in all order to a "Command --- > Response." basic

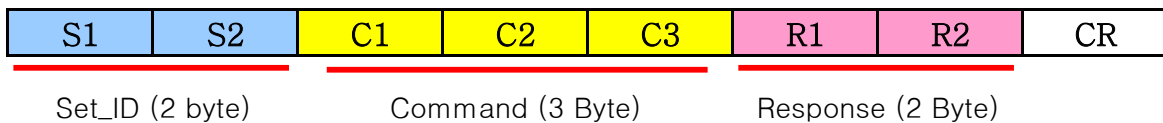
#### 1) Command Format

Eight ASCII Codes + CR

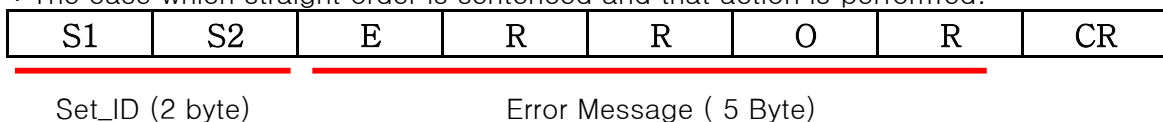


#### 2) Response Format

Eight ASCII Codes + CR



: The case which straight order is sentenced and that action is performed.



: When logic error a ( sentence error order ) or became wrong we send Error Message to the case when a communication error happens.

Command	Character	3 Byte
Set_ID	DEC (00 ~ 99)	2 Byte
Input/ Response	HEX (00 ~ FF)	2 Byte

Set the case to be ID edge 0 sends the order to all TV to be connected.

- All alphabet is the lowercase.
- Command is a lowercase 3rd word.
- Set\_ID is the value of Decimal from 00 to 99.(00 sends the order to all TV)
- The case to read the price of the situation currently not to change the setting up it inputs in "ff0" in command line.

*Ex. When the Set\_ID wants lighting 1st person TV*

```
> mpo0101  
> 01mpo01
```

Command : " mpo0101" (mpo : Power / 01 : Set\_ID / 01 : Power On)  
Response : " 01mpo01" ( The Set\_ID lights 01st person LCD&PDP)

*When the Set\_ID wants knowing the Power condition of 3rd person TV*

```
> mpo03ff  
> 03mpo01
```

Command : " mpo03ff" (mpo : Power / 03 : Set\_ID / ff : Present situation question)  
Response : " 03mpo01" ( Status : Power On)

*When the TV with 12th Set\_ID wants Volume 34*

```
> svo1234  
> 12svo34
```

Command : " svo1234" (svo : Volume / 12(Dec) : Set\_ID / 34(Dec) : Volume size)  
Response : " 12svo34" ( Set\_ID 12th person PDP Volume 34)

*When wanting putting out all the member of all TV*

```
> mpo0000
```

Command : " mpo0000" (mpo : Power / 00 : All PDP which are connected / 00 : Power)

*when it wants to sees Last Command it does not change a set not to be*

```
> ff00100
```

Command : " ff00100" (ff0 : The Last the Command it asks / 01 : Set\_ID / 00 :  
Condition question)

### 3. Communication Table

#### 1) Command structure

C1	C2	C3
----	----	----

P : Picture

S : Sound

M : Setup (Miscellany)

T : TV

# Command Table

Command			SET ID		INPUT	
C1	C2	C3	S1	S2	I1	I2
P	C	T	0	1	0	0

EX)

## Picture

Control Item		Command			Set ID	Input	Remark
Source Select	TV	p	s	s	*00	00	*Set ID=00 send same command to all TV on data chain. For individual TV control set ID = (01~99) to match TV ID number in advanced menu
	AV 1				00	01	
	AV 2				00	02	
	S-Video /AV3				00	03	
	Component 1				00	04	
	Component 2				00	05	
	PC				00	06	
	DVI				00	07	
Picture mode	Standard	p	p	m	00	*00	*Repeat command "ppm0000" to scroll through selections
	Vivid				00	01	
	Mild				00	02	
	User				00	03	
Color Temperature	Cool 2	p	c	t	00	00	
	Cool 1				00	01	
	Normal				00	02	
	Warm 1				00	03	
	Warm 2				00	04	
V.Size	16:9	p	v	z	00	*00	*Repeat command "pvc0000" to scroll through selections
	Panorama				00	01	
	Zoom1				00	02	
	Zoom2				00	03	
	4:3				00	04	
Video NR	OFF	p	n	r	00	00	
	ON				00	01	
Contrast		p	c	r	00	00	Contrast Down Increment
					00	01	Contrast Up Increment
Brightness		p	b	r	00	00	Brightness Down Increment
					00	01	Brightness Up Increment
Color		p	c	o	00	00	Color Down Increment
					00	01	Color Up Increment
Tint		p	t	i	00	00	Tint Down Increment
					00	01	Tint Up Increment
Sharpness		p	s	h	00	00	Sharpness Down Increment
					00	01	Sharpness Up Increment
Recall		p	r	e	00	00	
Still	OFF	p	s	t	00	00	
	ON				00	01	
PIP Size	OFF	p	p	z	00	*00	*Repeat command "ppz0000" to scroll through selections
	Small				00	01	
	Large				00	02	
	Twin				00	03	



## Picture

Control Item		Command			Input	Input	Remark
PIP Source	TV	p	p	s	00	00	
	AV1				00	01	
	AV 2				00	02	
	S-Video /AV3				00	03	
	Component 1				00	04	
	Component 2				00	05	
	PC				00	06	
	DVI				00	07	
PIP Position	Right Down	p	p	p	00	*00	*Repeat command "ppp0000" to scroll through selections
	Right UP				00	01	
	Left UP				00	02	
	Left Down				00	03	
PIP_Swap(Cross)		p	p	x	00	00	
Geo_H Position		p	g	h	00	00	Down Increment
					00	01	Up Increment
Geo_V Position		p	g	v	00	00	Down Increment
					00	01	Up Increment
Geo_Phase		p	g	p	00	00	Down Increment
					00	01	Up Increment
Geo_Auto		p	g	a	00	00	Down Increment
					00	01	Up Increment
Geo_Native Mode		p	g	n	00	00	Down Increment
					00	01	Up Increment
Geo_Native H-size		p	g	s	00	00	Down Increment
					00	01	Up Increment
V-chip	OFF	p	v	c	00	00	
	ON				00	01	

## Sound

Control Item		Command			Input	Input	Remark
Sound Mode	Standard	s	s	m	00	00	*Repeat command "ssm0000" to scroll through selections.
	Movie				00		
	Music				00		
	News				00		
	User				00		
Spatial Effect	OFF	s	s	e	00	00	
	ON				00	01	
AVC	OFF	s	a	v	00	00	
	ON				00	01	
Mute	OFF	s	m	u	00	00	
	ON				00	01	

## Sound

MTS	Mono	s	m	t	00	00	Direct Input – No scrolling input command needed
	Stereo				00	01	
	Language A				00	02	
	Language B				00	03	
	Language AB				00	04	
	SAP				00	05	
Volume		s	v	o	00	(0~99)	
Balance		s	b	a	00	00	Down Increment
					00	01	Up Increment

## Miscellany (Setup)

Control Item		Command			Input	Input	Remark
Power	OFF	m	p	o	00	00	
	ON				00	01	
Remote Lock	OFF	m	r	l	00	00	
	ON				00	01	
Sleep Time	OFF	m	s	t	00	*00	*Repeat command "mst0000" to scroll through selections
	10				00	01	
	20				00	02	
	30				00	03	
	60				00	04	
	90				00	05	
	120				00	06	
	150				00	07	
	180				00	08	
Blue Back	OFF	m	b	b	00	00	
	ON				00	01	
Front Key Lock	OFF	m	f	p	00	00	
	ON				00	01	
Language	English	m	l	a	00	00	
	Deutsch				00	01	
	Francais				00	02	
	Espanol				00	03	
	Italiano				00	04	
	China				00	05	
Caption	OFF	m	c	c	00	*00	*Repeat command "mcc0000" to scroll through selections
	CC1				00	01	
	CC2				00	02	
	Text1				00	03	
	Text2				00	04	
Film Mode		p	f	m	00	00	
					00	01	
Black Enhancer		p	b	e	00	00	
					00	01	

## TV

Control Item		Command			Input	Input	Remark
Fine Tune		t	f	t	00	00	
					00	01	
CH Up		t	p	u	00	00	
CH Down		t	p	d	00	00	
CH Number (0~99)		t	p	n	00	(0~99)	
CH Number (100~127)		t	p	h	00	(0~27)	
Pre .CH		t	p	c	00	00	
PIP SUB CH Up		t	s	u	00	00	
PIP SUB CH Down		t	s	d	00	00	
Digest	OFF	t	d	i	00	00	
	ON				00	01	
Channel Type(NTSC)	AIR	t	c	t	00	00	
	CATV				00	01	
	HRC				00	02	
	IRC				00	03	
Channel Type(PAL)	AIR				00	04	
	CATV				00	05	
Auto Scan		t	a	s	00	00	